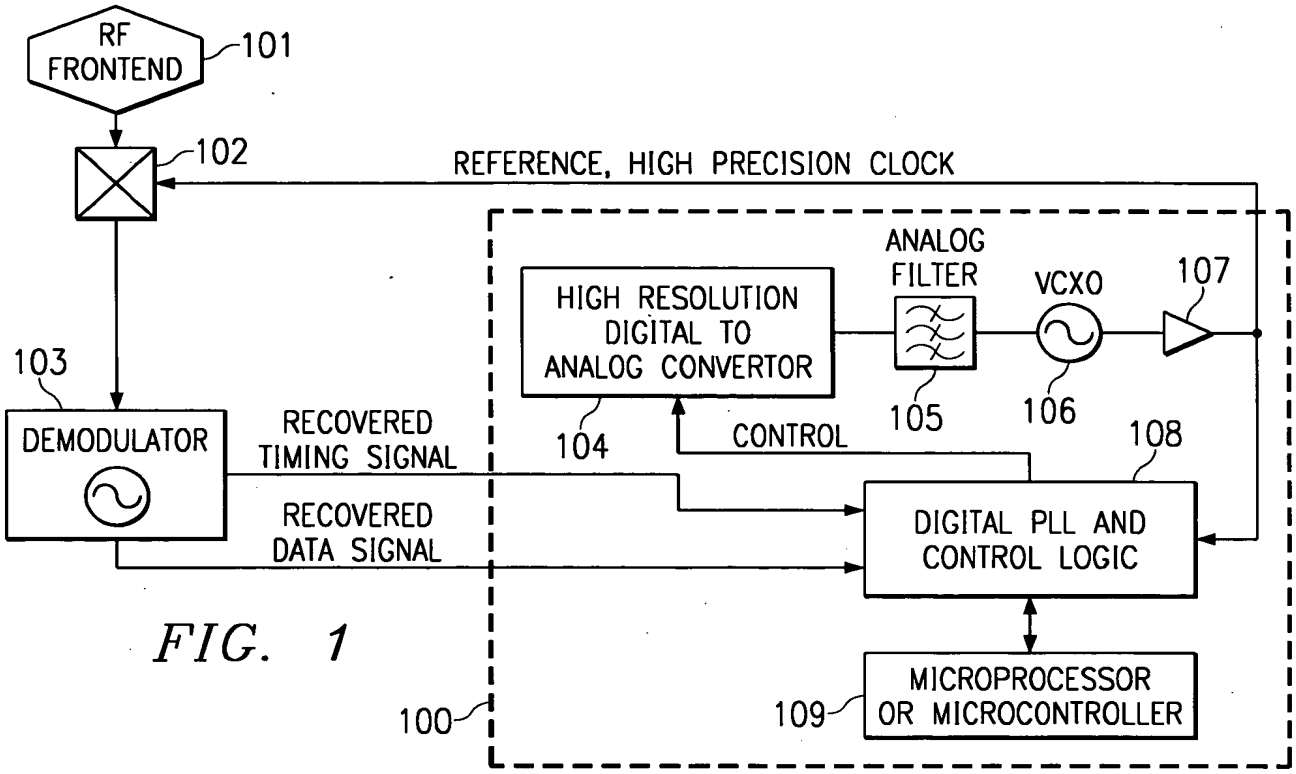
RF FRONTEND
101
102
REFERENCE, HIGH PRECISION CLOCK
ANALOG FILTER
VCXO
107
HIGH RESOLUTION DIGITAL TO ANALOG CONVERTOR
103
DEMODULATOR
RECOVERED TIMING SIGNAL
RECOVERED DATA SIGNAL
104
CONTROL
105
106
108
DIGITAL PLL AND CONTROL LOGIC
MICROPROCESSOR OR MICROCONTROLLER
109
100

FIG. 1

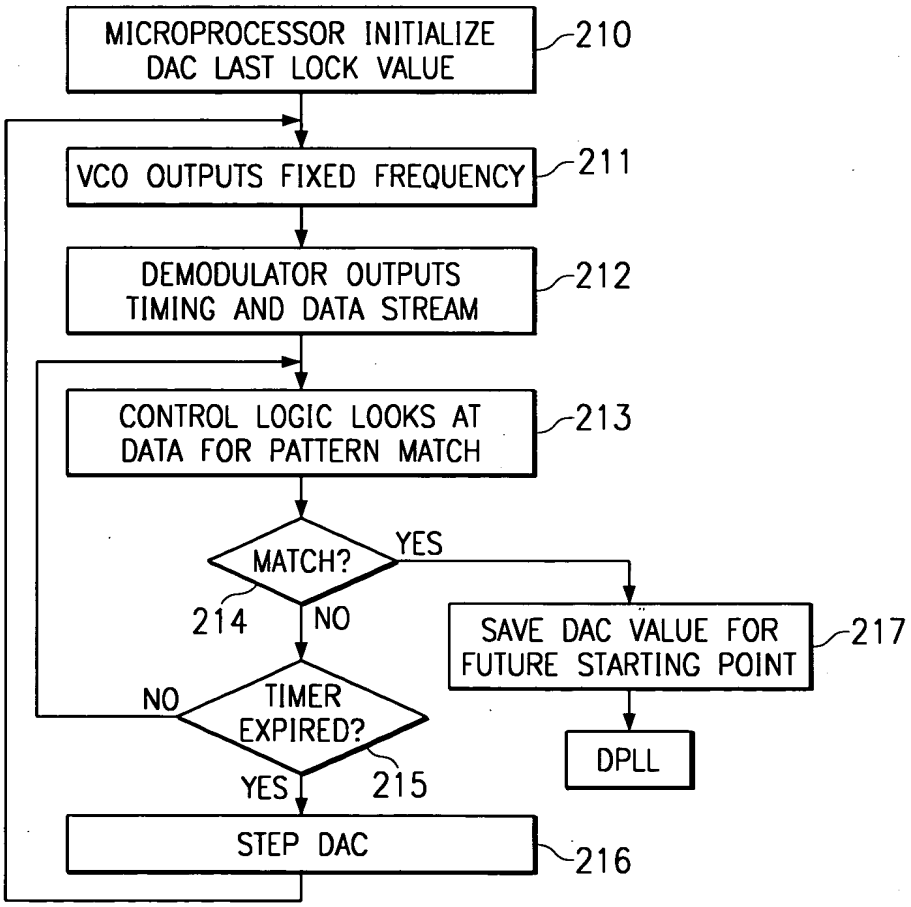
MICROPROCESSOR INITIALIZE DAC LAST LOCK VALUE
210
VCO OUTPUTS FIXED FREQUENCY
211
DEMODULATOR OUTPUTS TIMING AND DATA STREAM
212
CONTROL LOGIC LOOKS AT DATA FOR PATTERN MATCH
213
MATCH?
YES
214
NO
SAVE DAC VALUE FOR FUTURE STARTING POINT
217
NO
TIMER EXPIRED?
215
DPLL
YES
STEP DAC
216

FIG. 2

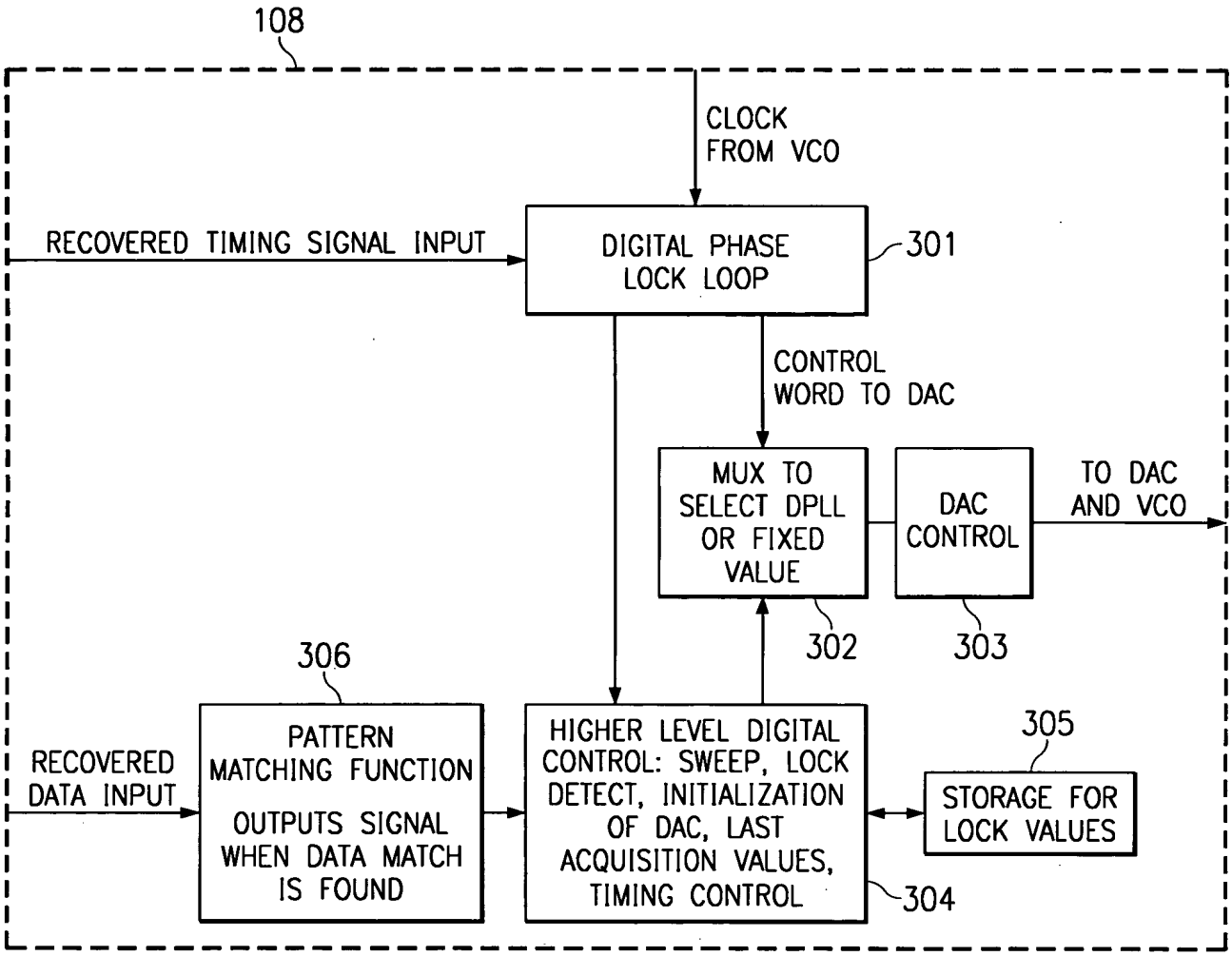
108
CLOCK FROM VCO
RECOVERED TIMING SIGNAL INPUT
DIGITAL PHASE LOCK LOOP
301
CONTROL WORD TO DAC
MUX TO SELECT DPLL OR FIXED VALUE
DAC CONTROL
TO DAC AND VCO
302
303
306
PATTERN MATCHING FUNCTION
OUTPUTS SIGNAL WHEN DATA MATCH IS FOUND
RECOVERED DATA INPUT
HIGHER LEVEL DIGITAL CONTROL: SWEEP, LOCK DETECT, INITIALIZATION OF DAC, LAST ACQUISITION VALUES, TIMING CONTROL
304
305
STORAGE FOR LOCK VALUES

FIG. 3